(2)

No. 06-175

IN THE

Supreme Court of the United States

In Re MARIA GONZALEZ, individually and as mother and legal guardian of her daughters TARA GONZALEZ (age 14) and NICOLE GONZALEZ (age 8)

Petitioner.

ON PETITION FOR WRIT OF MANDAMUS TO THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

BRIEF OF HEALTHY SCHOOLS NETWORK, INC. AS *AMICUS CURIAE* IN SUPPORT OF PETITIONER

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QUESTION PRESENTED ADDRESSED BY *AMICUS CURIAE*

Should the Federal Communications Commission ("FCC"), in launching a major new program that will risk biological harm to vulnerable children, be able to continue to ignore the National Environmental Policy Act ("NEPA") requirement that an environmental impact statement ("EIS") be prepared for all major governmental undertakings simply because scientific warnings of health hazards have not reached the stage of definitively establishing harm to humans?

Should the FCC be excused from performing an NEPA-mandated EIS just because a multitude of *ad hoc* licensing and site-specific reviews are available, as the so called "functional equivalent" of an EIS, which (a) impose new costs on local citizens and governments, (b) are dependant on challenges by potential victims who most often would not know of the risk, and (c) would be based on the scientifically questionable assumption that no biological harm is being caused by long term radio-frequency ("RF") radiation until the certainty of harm is definitively established?

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PRELIMINARY STATEMENT

This case raises the very significant questions of (a) whether the FCC, in launching a major new cellular telephone program, should be able to ignore both the safety of children and the NEPA requirement that an EIS be prepared for all major governmental undertakings simply because scientific warnings of health hazards have not reached the stage of definitively establishing harm to humans, and (b) whether the availability of a multitude of *ad hoc* licensing and site-specific reviews, applying standards based on the scientifically questionable assumption that no biological harm is being caused by long term radio-frequency ("RF") radiation, is the "functional equivalent" of an NEPA-mandated EIS.

DESCRIPTION AND INTEREST OF *AMICUS CURIAE*

Healthy Schools Network, Inc. ("HSN") submits this brief as *Amicus Curiae* with the written consent of all parties [3]

HSN is a national environmental 501(c)(3) not-for-profit corporation organized in 1995, and incorporated in 1998 under the laws of the State of New York. Its offices are located in Albany and Washington. D.C. HSN is dedicated to assuring every child and school employee an environmentally safe and healthy school through research, information, advocacy and coalition building. HSN's web site is www.healthyschools.org. HSN promotes the

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[3] Pursuant to Supreme Court Rule 37.6 *Amicus* states that this brief was authored in whole by undersigned counsel and his client, and that no person or entity other than the *Amicus* made a monetary contribution to the preparation and submission of this brief.

development of national, state, and local policies, programs and funds with a two-fold focus: to improve the environmental conditions of school facilities, and to promote children's environmental-'occupational' health in their "workplaces" – schools.[4]

In 2000 HSN convened the *ad hoc* Coalition of Healthier Schools to provide "the platform and the forum for school environmental health", uniting public health, environment, parent, labor and education groups and individuals around policies to prevent environmental exposures that are associated with health problems in children and adults. HSN links the coalition members through sponsoring conference calls and meetings. Participating policy groups come from areas enrolling more than ten million of the nation's 48 million public school children. Collaborating nationwide, HSN has led National Healthy Schools Day activities for the last three years, created a "*National Healthy Schools Training*

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[4] HSN has won national recognition for its Healthy Schools/Healthy Kids Clearinghouse informational services, and has a long history of helping other nonprofits and agencies develop school environmental programs sensitive to children's needs. HSN has fostered the creation of state-based policy reform organizations and scores of local groups concerned with environmental health in schools. HSN has been honored to receive in 2005 the U.S. Environmental Protection Agency **Children's Health Protection Recognition Award**. Its executive has also chaired the U. S. EPA's Office of Child Health Protection Advisory Committee's Work Group on School Environments in 2001-02 and again in 2004; co-chaired the School Policy panel for the prestigious 9th International (triennial) Indoor Air Conference in Monterey, California in July 2002; coordinated invited testimony in the U.S. Senate Environment and Public Works Committee Hearing on School Environments in October 2002; and, since 2003 has led two briefings for The White House Council on Environmental Quality.

Binder," encouraged research, and advocated for federal and state reforms.

HSN's preventive approach to designing, building, and maintaining school buildings is based on the knowledge that (a) children are more vulnerable to environmental hazards than adults, (b) they cannot protect themselves from hazards, (c) they are required to be in school, and (d) no agency is authorized to intervene when children are at risk. Authoritative scientific studies indicate that facilities with superior indoor environmental quality and good day lighting are associated with higher test scores and attendance. Applying this base, HSN promotes "high performance school" design and construction consistent with its support of the Healthy and High Performance Schools provisions of No Child Left Behind – schools designed for energy and resource conservation as well as superior environmental quality through reducing the use of polluting materials.

In 1996 HSN created the Healthy Schools/Healthy Kids Clearinghouse offering informational fact sheets, guides, and reports, phone and email assistance to parents, personnel, and to schools. Areas of health interest to HSN other than the RF radiation exposure danger discussed here are set forth in Appendix A. Web-based publications address common concerns. More extensive guides outline occupational health regulations and identify agencies in the states that are likely to have responsibilities. By providing steady advice on preventing environmental problems, HSN helps parents and the education communities become aware of environmental problems and understand how to prevent or to reduce them.[5]

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[5] As part of its program to protect children's health, HSN has promoted research and translated it into policy action. A 2004 HSN report, *The Healthy and High Performance School,* summarizes

EPA currently estimates that half of all schools have compromised indoor environments; and since schools are primarily locally funded, it is not surprising that federal reports continue to find that the poorest children have the schools in the worst condition. There clearly is an enormous unmet need to improve, not further undermine, school environments.

HSN is quite concerned that a significant threat to the health of school children and personnel is posed by RF radiation from cell towers placed on or near schools or day care centers. Two members of HSN's board are scientists with extensive experience in dealing with the potential of harm from electronic transmissions. HSN submits this brief as *amicus curiae* to advise the Court of the need for enforcement of a court-mandated EIS in this case.

THE PETITION FOR MANDAMUS SHOULD HAVE BEEN GRANTED

This case addresses a very significant potential health risk to the nation's school children for which no one is currently assuming responsibility. Because of their greater vulnerability, inability to avoid exposure, and lengthy school-day exposure, the need for an EIS evaluating the new FCC's new Advanced Wireless Services ("AWS") program is more compelling for the 54 million children in

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peer-reviewed scientific literature on school indoor environments and children's health (Boese & Shendell (2004)). The U.S. DOE Study of National Significance (2004) covered many similar studies. Another HSN data report found that poor facility conditions were associated with lower test scores and attendance and higher suspension rates (See Boese & Shaw (2005)).

public and private schools in the United States than either the adult population or the general population at large.

A. Existing Scientific Warnings of Harm From Long-Term Exposure to RF Radiation Justify Concern about the Launch by the FCC Of A New Program Without EIS Evaluation

There now exists a substantial body of published scientific research suggesting that the potential for harm from new cellular transmission technology is real. These studies justify concern that cellular band towers operating near school buildings emit RF radiation that may be harmful to the health of humans in the immediate area and cause biological harm through long term exposure.

Electromagnetic radiation is a form of energy which travels in waves and includes everything from high energy X-rays and cosmic rays through visible light to the low energy electric and magnetic fields released from power lines. Cellular telephone towers release RF radiation that is in the microwave region of the electromagnetic spectrum.

High energy electromagnetic radiation is clearly harmful, and can cause cancer and birth defects through direct damage to the genetic material in cells. There is also a substantial body of scientific evidence showing that the low energy electromagnetic fields coming from power lines and electrical appliances (at a frequency of 60 Hz in the U.S.) also pose an elevated risk of cancer to humans. While the degree of hazard from lower energy fields is still a matter of controversy, the evidence that there is an increased risk of cancer among highly exposed persons nevertheless is very strong. A report in 1999 to the U.S. Congress from the National Institute of Environmental

Health Sciences has concluded that "the epidemiologic studies demonstrate...a fairly consistent pattern of a small increased risk with increasing exposure that is somewhat weaker from chronic lymphocytic leukemia than for childhood leukemia" (National Institute (1999).[6] The report also concludes that animal studies have not resulted in cancer, but that no mechanism is known to explain the increased leukemia seen in people exposed to these electromagnetic fields.

Questions of safety increase with respect to cellular tower transmission fields as compared to those generated by electrical transmission lines. The energy in all forms of electromagnetic radiation increases as the frequency increases. The frequency, and therefore the energy, released from cellular phone towers is less than x-rays and visible light, but greater than that of power lines. Since there is a general consensus that the relative harm from electromagnetic radiation is in proportion to the energy of that radiation, one would expect cell tower RF radiation to be less harmful than x-rays, but more harmful than that coming from power lines. Unfortunately, there has been almost no careful investigation of human health effects from cellular phone frequencies, although clearly there is significant exposure to individuals who are in close proximity to cellular towers.

RF fields are basically the same as microwaves, which clearly do cause heating if the intensity is great

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[6] Introduction to the report by Dr. Kenneth Olden, then the Director of the National Institute of Environmental Health Sciences and currently a member of the Board of Directors of the HSN who has participated in the preparation of this brief.

Because of the length of citations to scientific reports in this brief, to facilitate reading, all references to scientific reports are to shortened versions set forth in the Table of Cited Authorities.

enough. The proposed ultra-high frequency RF waves involved in this case will have more energy, and thus be more potent in potentially causing harmful effects, than the RF fields in current usage.

Present international standards for exposure to RF fields, including the FCC's present RF radiation standards the application of which it offers to excuse its failure to conduct an EIS study, are based on limited information and on the highly questionable assumption that there are no non-thermal effects of RF radiation, thus the present scientific debate is over whether there are "non-thermal" effects that are not mediated by tissue heating. The answer is that some, but not all studies of humans indicate that non-thermal RF fields do cause harm to humans. We will now summarize the available information.

The strongest evidence of adverse health effects indicates concern for causation of cancer. Szmigielski (1996) reported cancer morbidity in Polish military personnel, and found that personnel exposed to RF/microwave radiation showed a greater than two-fold risk of any cancer as compared to unexposed personnel. The relations were strongest for hematopoetic cancers, which were elevated between 5.8 and 13.9 fold. Grayson (1996) reported a significant 1.29 fold elevation in brain tumors in US Air Force personnel exposed to RF/microwave radiation. Dolk et al. (1997) reported a 1.3 fold elevation in incidence of leukemia in individuals living near an FM radio transmitter in England. Michelozzi et al. (2002) reported a significant elevation in adult and childhood leukemia in residents living near a high-powered radio station in Rome. Park et al. (2004) investigated cancer rates in Korea in individuals living near AM radio broadcasting towers, and reported significant elevations in leukemia, especially in the young.

Hardell et al. (2004) found that individuals using analog cell phones had a greater than eight-fold increased risk of developing brain tumors, while with cordless phone usage the increased risk was more than four-fold, and Lonn et al. (2004) also found an increased risk of acoustic neuroma (a form of brain cancer) among persons in Sweden who used a cell phone for 10 or more years.[7]

Kundi et al. (2004) summarizes the results of nine different human epidemiological studies of cell phone users from the U.S. and Europe. While elevated risks of brain cancer, leukemia or melanoma were reported in these studies, all have some limitations. Also, the period of cell phone use was short, whereas cancer often takes a long time to develop[8]. The authors of the Kundi study conclude that while the evidence to date is not sufficient to prove that cell phone use causes cancer, there is sufficient concern that more research be done. A very

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[7] There are a number of reports of non-thermal effects of RF transmissions on human populations. Robinette et al. (1988) investigated morbidity and mortality of US navy personnel exposed to radar, and Lilienfeld et al. (1978) looked at similar indicators in occupants of the US Embassy building in Moscow, which was exposed to RF radiation. Neither reported any change in morbidity or mortality. Thus not all studies have found elevated rates of cancer, including leukemia and brain cancer in tumors, upon exposure (see Morgan et al. (2000), as discussed further below. However, Milham (1982) and Coleman et al. (1983) have reported elevations in leukemia incidence among ham radio operators and electricians. There are other studies that also report positive associations between RF exposure and cancer (Milham (1985; 1988a and 1988b); Szmigielski et al. (1998), all referenced in Elder (1994)). But all of these studies lack good dosimetry, i.e., measurement of the intensity of RF fields, with regard to levels of exposure.

[8] It was not always possible to quantify the exposure well, and since exposure was dependent upon subjects remembering their degree of cell phone use, this may have led at times to inaccurate information.

similar conclusion was made in another recent review by ICNIRP et al. (2004), which points out that the human studies are not all consistent, but that there are so many deficiencies in the studies to date that one cannot rule out an association between exposure and cancer.

A recent research report from Australia (Repacholi et al. 1997), made in the laboratory of a researcher known to be skeptical of RF danger, shows that digital mobile phone radiation boosts cancer rates in mice is particularly important in this regard. It provides much additional support for concern about exposure to these forms of electromagnetic radiation.

Aside from cancer, other biological effects have also been observed by researchers. They include increased spontaneous abortion, shifts in red and white blood cell counts, increased mutations in lymphocytes (see Goldsmith (1997)), direct damage to nerve cells from microwaves from GSM mobile phones (Salford et al. (2003)), altered diurnal rhythms of blood pressure and heart rate (Szmigielski et al.(1998)), changes in brain wave activity (Eulitz et al. (1998)), and altered performance of rats in learning tasks (Wang & Lai (2000)).

The FCC's implication below that only high-energy ultraviolet, x-ray or nuclear radiation have sufficient energy to cause biological injury because there is "no scientific consensus on the issue" (FCC Brief below, p. 4) is inconsistent with the U. S. GAO Report (2001), Kundi et al. (2004) ICNIRP (2004), Kheifert (2005) and Owen (2000). (See Appendix B for relevant statements from these studies).

Salford et al. (1994) reported that low power RF fields, below that which caused thermal effects, increase leakage of protein from the blood-brain barrier, and in

2003 found that this resulted in nerve cell damage in the brain. Tattersall et al. (2001) found that RF field applications below the level which causes heating resulted in changes in the electrical activity of brain slices, which suggests that such fields can alter nervous system function. Huber et al. (2000) showed that human exposure to digital radiotelephone handsets affects brain physiology in young healthy male subjects, modifying their EEG during subsequent sleep.

As indicated, the studies suggesting cancer and other health risks do not stand alone.[9] But the available evidence certainly does NOT permit anyone to conclude that cell transmissions are not harmful, much less that long exposures to closely transmitted ultra-high frequency cellular transmissions are not harmful.

Under these circumstances where the science is uncertain with regard to human health risk it is difficult to make decisions. Given the current state of research, at best one can reasonably conclude that at present there is neither adequate evidence to conclude that exposure to RF radiation is "safe," or that it is hazardous.[10] Even though

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[9] Some studies suggesting that there are no links to cancer and other biological harm are described above. There are also several reviews that express skepticism that RF exposures are linked to cancer and other biological harm (Hermann & Hossmann (1997); Moulder et al. (1999); and Elwood (2003)). There are several reports that have not found elevated rates of death (Rothman et al. 1996) or incidence of brain cancers (Inskip et al. 2001); Christensen et al. (2005) among cell phone users. None of the studies reported health effects focused on cell phone tower transmissions.

[10] But even this uncertainty and need for caution arose in the context of the older transmissions. The FCC is now in the process of launching a totally new spectrum of ultra-high frequency magnetic field, slightly more powerful, and therefore potentially more dangerous, bringing with it new uncertainty. The new program

the evidence to date does not allow one to conclude that RF exposure is definitely hazardous to human health, it certainly does suggest the conclusion that there is reason to be cautious since, if anything, the majority of the studies are suggestive of an association between exposure and cancer.

B. The Potential for RF Radiation Harm is Greater for Children and for Schools

When a cellular transmission is beamed through, on, or near a school, the long-term exposure to RF radiation is significantly greater because the transmission is directed at a concentrated portion of the most vulnerable part of our population each school day – school children. We also know from existing studies that the risk of harm from RF exposure increases as exposure increases (Dolk et al. 1997; Michelozzi et al. 2002). This means that the risk of long term RF exposure from transmissions located near schools is multplied because schools are gathering places for the most vulnerable part of the population for long periods of time.

As cellular coverage increases in each community, causing cellular transmissions to become sited closer to congested areas, the possibility that the cellular towers will be located, as in this case, so that they aim their

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raises still another level of questions, and there are plans for transmissions at even higher frequencies in the future. Studies discussed above signal the need for evaluations of the potential harmful effects of the new high frequency RF radiation. Also, the fact that these megahertz bands are currently being used by licensees transmitting lower frequencies (as the FCC argued below) does not reduce the risk of increased harm from higher frequencies when that higher frequency use begins.

transmissions from the top, through, and over schools also increases. Unlike with a TV or radio tower where the electromagnetic radiation goes in all directions (360°), the beam from a cell phone tower is usually directed at the horizon. This becomes of particular concern when an occupied space is in the direct path of the cone-shaped cell tower transmission pathway. In general, the closer one is to the tower, the stronger the radiation, especially if in the direct line with the tower.

Some schools are at more risk than others due to fiscal constraints and the attractiveness of developing outside income. Schools are more locally funded than state funded. There is virtually no federal funding for school construction and, compared to all local sources, comparatively little for educational programs. School systems needing more resources try to earn money many ways, for example selling ad space, selling sweets, or even leasing cell tower space. Thus, the lower income neighborhoods with lower-income/higher risk students and with resource-poor schools are more likely than schools serving high income populations to agree to lease rooftop space to cell towers.

Children are particularly susceptible to pollutants and therefore likely to be much more vulnerable to the effects of cell phone frequencies. See generally, National Research Council (1993) recognizing that fetuses, children, and all developing organisms are often more susceptible to environmental agents than adults, and that public health policy often fails to reflect this unique susceptibility. The study of RF transmission risk by ICNIRP et al. (2004) emphasizes that none of the studies to date have focused on exposure of children.

This potential for harm to children is exacerbated by the long term exposure that results from young children

spending significant periods of time in school. Schools are a gathering place for children for between six and eight hours a day, five days a week, and some children may be in school for breakfast programs through after school activities, a far longer 'work' week. While this is still not as much as the home life of each child, this is substantial exposure nevertheless, and it is concentrated among many children. And it is not as if the resulting risk of harm can be avoided. Children are required by law to attend school, and need to be educated. Even if the risks were generally known, which they are not, most children have no alternative but to attend the school to which they are assigned and therefore endure whatever risks are present in that environment. Schools are generally not required to inform parents of such risks.

C. Precaution Dictates the Need for an EIS.

Some forms of environmental harm exist in schools solely because of negligence, short sightedness, lack of funds for planning, siting, and maintaining schools, or the indirect result of greed in school construction, and cannot therefore be anticipated. But there are also many other forms of environmental harm that can be anticipated and thus avoided. Awareness of this possibility led HSN in the mid-90's to urge schools to adopt a policy of prevention to promote healthy school environments.

HSN is not alone in adopting preventive policies to improve school facilities. Other nongovernmental organizations and governmental bodies began taking systematic actions to improve school environments in the

late 1990's.[11] More recently, the powerful "Precautionary Principle" is being applied to a full range of chemical/biological issues. [12]

The Precautionary Principle, once the conceptual cornerstone of public health, is reemerging as a central concept in public health today.[13] The Principle is the idea that when there is credible evidence of adverse effects, precautionary action should be taken, even when some cause and effect relationships are not fully understood or

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[11] Specifically regarding electromagnetic fields ("EMF's"), HSN's adoption of preventive actions was prompted by the adoption of the New York State Board of Regents in 1995 of key guiding principles and recommendations of the Regents' Advisory Committee on School Environmental Quality (New York Regents Report 1994), stating that children were more vulnerable to hazards, and stating that schools should serve as role models for environmentally responsible behavior. In 1995, the Regents also adopted a policy of "prudent avoidance" of EMF's (New York Regents Report 1994, New York Regents Meeting (1995)). See text in Appendix C. Many other states adopting new policies to improve school indoor air quality were reported by Bernstein (2002). Another study by Bernstein also reported on how state and local agencies were promoting "high performance school design" (Bernstein 2003).

[12] This concept is imbedded in Principle 15 of the United Nations Environment Programme conference in Rio de Janeiro in 1992, to which the U.S. is a signatory (See U.N. Rio Declaration (1992) and Appendix D), and reflected as a policy (#200011) of the American Public Health Association for preventing harm to children (APHA Policy Statement, see Appendix E).

[13] The European Union adopted the Principle in the 1992 treaty that created the union and the policy was put forward throughout the EU in 2000. See http://ec.europa.eu/dgs/health_consumer/library/pub/pub07_en.pdf. In 2003, the European Commission hosted a conference on the application of the Precautionary Principle to EMF fields. See http://ec.europa.eu/health/ph_determiants/environment/EMF/conf_febvruary_2003_en.htm.

established. In situations where there is some evidence of a human health hazard, but not enough to be characterized as definitive proof, it is deemed wise to take preventive action to avoid or reduce exposures.

The Principle is most appropriate for application precisely in those areas, like this case, where proof that causal harm exists as a potential threat, but is not available as a definitive result[14]. Implementation of the Precautionary Principle is especially important when children are involved because of the greater vulnerability of children to the effects of toxic exposures as their bodies are developing (See subsection B, supra).

As indicated in subsection A, supra, the new AWS cell-tower transmission program is a classic situation of uncertainty and risk calling for precaution. Under this clear need for evaluation of risk the wisest approach for both government and individuals is to take the first step in implementing precaution by conducting an EIS study as required by law. Human exposure should be reduced by applying prudent avoidance until the EIS process is completed, and thereafter steps should be taken to avoid risk based on the conclusions of the evaluation.

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[14] See generally, Raffensperger & Tickner (1999) and APHA Policy Statement: "recognizing that proof of cause and effect relationships is often difficult to establish because of non-specificity of health effects, long latent periods, subtle changes in function that are difficult to detect without resource-intensive studies, and complex interactions of variables that contribute to adverse health effects." . Both Raffensberger & Tickner (1999) and Jackson (1993) are sources for APHA Policy: "recognizing that some uncertainty is irresolvable by more data collection; that some residual uncertainty is actually the result of indeterminacy due to multiple factors interacting in complex systems or due to ignorance about what questions to ask or what effects to look for".

It is unrealistic to excuse application of the Precautionary Principle on the argument that application of the Principle for health safety reasons conflicts with the FCC's mandate to promote telecommunication services to the public for industry by expanding the telecommunications industry, cf. *Cellular Phone Taskforce v. FCC*, 205 F. 3d 82, 91-92 (2000), since the FCC cannot even properly assess the balance between serving the public's health (which may have to bear an incalculable cost to children) and serving the public through industry without an EIS evaluation. Unfortunately the position industry being taken by the FCC in this litigation with respect to its new AWS program is quite the opposite of precaution. Despite existing suggestions of potential biological harm, the FCC intransigently relies, without the benefit of an EIS, on its judgment (which we believe to be unscientifically sound) that its safety standards are adequate when it could instead be taking steps to avoid harm. The FCC's position that it perceives no need for action by way of avoidance or study in the absence of definitive proof of harm amounts to insisting on a body count first approach. The health and learning of the nation's children does not have the luxury of proceeding by such an incalculably costly and tough standard

D. An EIS Is Necessary Because There Is No Good Alternative

One common factor that HSN repeatedly finds accompanying discovery of harmful exposures in schools is that no agency is charged with protecting children's health, or watching out for dangers in the school. HSN has documented in two recent national collaborative

reports[15] that in state after state no agency is charged with protecting children's environmental health, or authorized to intervene when hazards affect school children. There is also no systemic national or state surveillance of school environments or of child health at school.[16]

Few if any educational leaders, and those charged with organizing and structuring educational systems, have any training in facility management. Fewer still would have information about children's enhanced vulnerability to environmental hazards (see www.epa.gov/children). Based on past experience it can be assumed that school administrators and the governmental agencies that supervise and administrate school systems are going to be more focused on educational systems than on school environmental hazards.

Potential harm from cell transmission is no exception to this pattern of safety oversight. Children, the most numerous potential victims, cannot be expected to provide safety oversight for themselves, nor to self-advocate. If the FCC does not conduct an EIS evaluating the risks of the new RF radiation it is about to unleash, it can reasonably be expected that no other agency or local school administrator or parent will step in to produce or to

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[15] See Barnett & Paulson (2005) and Healthy Schools Network, *Lessons Learned* (2006).

[16] Following on federal reports of poor indoor air quality and other environmental risks at school, one federal agency, the U.S. Environmental Protection Agency, significantly expanded its voluntary guidance documents on schools (see www.epa.gov/schools). The federal Executive Order on Risks to Children's Health which had helped to coordinate federal efforts to protect children has lapsed in 2005 (U.S. Executive Order #13045).

finance an EIS that would generate protection. Hence the significance of a Court-mandated EIS in this case.[17]

As the FCC would have it, Court review should be limited to individual license proceedings or proceedings after the bidding occurs, and then only with respect to specific sitings by winning licensees. But any such review would be entirely *ad hoc*, dependant on the sophistication and watchfulness of the multitude of potential victims but too costly for them anyway, and would permit potential harm to proceed in the many instances where no site-specific review is focusing on potential harm. Even *ad hoc* victim watchfulness cannot be effective where (as in this case) cellular towers are camouflaged, and hidden by false representations as to their function (also as in this case), and the victims are primarily children. And even the piecemeal reviews ostensibly available would be without a global EIS. For these reasons there simply is no adequate alternative remedy. The conclusion of the Second Circuit in 2000 notwithstanding, HSN submits that the availability of a multiplicity of *ad hoc* reviews is simply not the "functional equivalent" of EIS evaluation. Cf. *Cellular Phone Taskforce v. FCC*, 205 F. 3d 82, 96 (2000) and *EMR Network v. FCC*, 391 F. 3d 269, 274-75 (D. C. Cir. 2004). Systematic problems demand systematic evaluations to lead to systematic solutions. Where the potential for environmental harm is both systematic and can also be anticipated, the solution should be systematic and anticipatory, not an *ad hoc*, or worse, a body-count first response.

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[17] By its reliance on safety standards ignoring current scientific knowledge suggesting concern about the uncertainty of RF radiation risk, the FCC is showing itself to be an inadequate protector for children and for our schools.

There is no satisfactory alternative to a Court-mandated EIS financed by public funds. The few watchful victims and parents that we hope are out there who might otherwise engage in *ad hoc* litigation cannot afford it themselves. However, requiring the FCC to prepare an EIS as required by law would go a long way in reducing existing concern and in facilitating formulation and implementation of a safe wireless licensing policy. If there is potential harm, but it can be avoided by caution, study, and prudent avoidance rather than wait until provable harm is first detected. Otherwise when and if that detection finally occurs much of the damage to a generation of children may already have been inflicted. An EIS performed by the FCC can be expected to help narrow the gap that exits in current private and public research. If it were to be determined through such study that a harm to be avoided does exist, steps will inevitably follow to achieve avoidance. If it should be determined that a risk does not exist, that determination will by itself go a long way in alleviating the concern that currently exists in the school environment. Better safe than sorry, as we have all been told growing up.

E. The Need for an EIS Is a National Health Issue so Significant It Should Not Be Avoided by Unrealistic Procedural Obstacles.

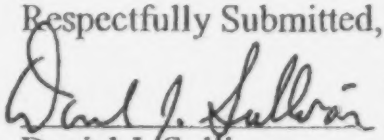
The Court of Appeals should not have denied this application based on what are essentially unrealistic procedural grounds. The new licenses program of new and untested ultra-high frequency licenses is certainly the commission "of resources in a federally significant action", and a "major federal action" of the proportions acknowledged by the Court of Appeals as giving rise to

the need for NEPA compliance. See *Cellular Phone Taskforce v. FCC*, 205 F. 3d 82, 87 (2000).[18] Particularly for children, the launch of this program is also a national health issue demanding relief by the exercise of the Court's discretionary power.

CONCLUSION

Healthy Schools Network, Inc. urges this Court to issue a writ of mandamus to the Court of Appeals for the Second Circuit directing the FCC to prepare and file an EIS for its Advanced Wireless Services program.

Respectfully Submitted,



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September 5, 2006

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[18] In its brief below the FCC characterized the licensing of the new ultra-sound spectrum r as an "important FCC program," and characterized the prior spectra as "unrelated." The staggering proportions of the licensing fee income expected ($1,167,037,500 just for "Upfront Payments" for the 1122 new licenses (Pet. Br. 13)), and the estimated value of the new spectrum ($15 billion by the Congressional Budget Office and approximately $34 billion by a Committee of the House of Representatives (FCC Brief below, p. 22)) also reflects the tremendous magnitude of this new AWS project.

Appendix A

Areas of health interest to HSN other than the RF radiation exposure danger discussed in this brief include:

(a) Indoor air problems, such as moisture damage to buildings and furnishings as a precursor to mold infestations ;
(b) Surface concentrations of microbials, such as bacteria and fungi that can affect the health of occupants of buildings;
(c) Biological agents in air and dust (bacteria, fungi, allergens such as dust mites, pet dander);
(d) Toxic and odorous volatile organic compounds, including formaldehyde;
(e) Direct measures and indicators (carbon dioxide) of ventilation;
(f) Temperature and relative humidity;
(g) Persistent organic pollutants (polychlorinated biphenyls, phthalates);
(h) Specific metals (arsenic, lead, mercury);
(i) Asbestos (and related lung cancer and mesothelioma);
(j) Radon gas;
(k) Lighting;
(l) Noise;
(m) Drinking water and sanitation;
(n) Disability access;
(o) High Performance School design including siting of facilities;
(p) Chemical use and storage;
(q) Environmentally Preferable Purchasing, and
(r) Environmental public health services for children.

Appendix B

The specific language on point from the citations at page 9, are:

"The consensus of FDA, the World Health Organization, and other major health agencies is that the research to date does not show radiofrequency energy emitted from mobile phones to have adverse health effects but there is not yet enough information to conclude that they pose no risk.....The findings of some studies have raised questions about possible cancer and non cancer effects that require further investigation."(U.S. GAO Report (2001)).

"All studies approaching reasonable latencies found an increased cancer risk associated with mobile phone use." (Kundi et al.(2004))

"No study populations to date have included children, yet children are increasingly heavy users of mobile phones and they are potentially highly susceptible to harmful effects." (ICNIRP (2004)).

"It [this review] includes an assessment of the potential susceptibility of children to EMFs and concludes with a recommendation for additional research and the development of precautionary policies in the face of scientific uncertainty." (Kheiferts et al. (2005))

"There is currently insufficient scientific basis for concluding whether wireless communication technologies pose any heath risk. A significant research effort, involving both large, well-planned animal experiments and epidemiologic studies of exposed populations, is needed to support risk assessment of these devices." (Owen (2000)).

Appendix C

Policy 7 of the New York State Board of Regents Advisory Committee on Environmental Quality of Schools Report of the New York State Board of Regents, The University of the State of New York, The State Education Department (1994), adopted 1995;

Policy 7

"Encourage schools to practice prudent avoidance by taking available no-cost and low-cost measures to reduce the exposure of students and school personnel to electromagnetic fields as follow:

7.1.1 The state Education Department should work with appropriate State agencies and recognized outside-authorities to provide updated and current information about electromagnetic fields in the school environment to the school community.

7.1.2 Electromagnetic and prudent avoidance measures should be considered in the siting, design, construction, and furnishing of new schools. This consideration should include all sources of electromagnetic field exposure in and around the proposed structure.

7.1.3 Electromagnetic field exposure and available prudent avoidance measures should be considered in determining space utilization in existing facilities and purchase of new equipment for these facilities.

Appendix D

Principle 15 of the United Nations Rio Declaration (1992):

> "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainly shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation"

Appendix E

Policy Statement #200011, American Public Health Association (APHA), contained in American Journal of Public Health, Vol. 91, No. 3 at pp. 20-21.

200011: The Precautionary Principle and Children's Health

The American Public Health Association, Recognizing that, for centuries, the cornerstone of public health policy and practice has been the prevention of injury and disease; and

Recognizing that the US has signed the Rio Declaration on Environment and Development which states;

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation, a statement known as the Precautionary Principal; (1) and

Recognizing that the American Public Health Association has previously encouraged the implementation of the Precautionary Principle with regard to workplace chemical exposure prevention policies; (2) and

Recognizing that current environmental regulations are primarily aimed at controlling pollution rather than using

primary preventive measures to avoid the use, production, or release of toxic materials; (3) and

Recognizing that development of enterprises, projects, technologies, products, and substances, that may adversely affect public health proceeds through initiatives that may or may not have considered a range of safer alternatives; (4) and

Recognizing that many of these enterprises, projects, technologies, products, and substances are considered safe until proven harmful; and

Recognizing that public health decisions must often be made in the absence of scientific certainty, or in the absence of perfect information; and

Recognizing that some industries engaged in the production, release, or distribution of potentially hazardous products and processes use their influence to delay preventive action, arguing that the immediate expense of redesign to achieve pollution prevention is unwarranted, lacking scientific certainty about harmful health effects; (5) and

Recognizing that fetuses, children, and all developing organisms are often more susceptible to environmental contaminants than adults, and that agency policies and decisions often fail to reflect this unique susceptibility; (6) and

Recognizing that proof of cause and effect relationships is often difficult to establish because of non-specificity of health effects, long latent periods, subtle changes in

function that are difficult to detect without resource-intensive studies, and complex interactions of variables that contribute to adverse health effects; (7) and

Recognizing that some lack of scientific certainty is irresolvable by more data collection; that some residual lack of scientific certainty is actually the result of indeterminacy due to multiple factors interacting in complex systems or due to ignorance about what questions to ask or what effects to look for; (8) and

Declaring that children and other sensitive populations are, therefore, in particular need of protection from environmentally related hazards; and

Recognizing that Presidential Executive Order #13045 requires that all federal agencies, when developing policies, must explicitly consider their impacts on children, therefore,

• Reaffirms its explicit endorsement of the Precautionary Principle as a cornerstone of preventive public health policy and practice, both in the U.S. and throughout the world;

• Encourages governments at all levels, the private sector, and health professionals to promote and abide by this principle in order to protect the health and well-being of all developing children. Thus, APHA calls for explicit inclusion of the precautionary approach in all federal, state, and local legislation, rules, or policies intended to protect children or that may impact the health of children;

• Urges that whenever an enterprise, project, technology, product, or substance is proposed for initiation, manufacture, or use or continued manufacture or use the goal of public health advocates should be to reduce or eliminate the creation of conditions that may adversely impact reproductive health, infants, or children;

• Advocates significant increases in pollution prevention efforts through clean production, assessment of safer alternatives, energy efficiency, waste minimization, safer waste disposal methods, and reduced consumption as a general means to protect children's health and development, rather than relying on risk management of individual hazards;

• Encourages explicit consideration of the kinds and magnitude of harm to reproductive health, infants, or children that may result from an activity and its alternatives;

• Encourages explicit consideration of the kinds and magnitude of uncertainties inherent in assessing potential harm to reproductive health, infants, or children from an activity and its alternatives;

• Encourages precautionary action to prevent potential harm to reproductive health, infants, and children, even if some cause and effect relationships have not been established with scientific certainty;

• Urges scientists to engage in analysis and studies to develop implementation strategies using the Precautionary Principle that are based on sound science.

• Enunciates the urgent need for improved research methods to understand better the additive, cumulative, and synergistic effects of multiple stressors on children's development and health; and.

• Urges the United States to honor and explicitly refer to the Precautionary Principle during negotiations of international agreements, while working to establish the Precautionary Principle as a guiding principle of environmental and health-related international law.